General Notes.

GEOGRAPHY AND TRAVELS.

The Ascent of Mount St. Helens.—The following abstract of an account of the ascent of Mount St. Helens by Mr Fred. G. Plummer, prefaced by a brief history of its recent eruptions, appeared in the December number of *Scientific American:*

"St. Helens has shown considerable activity in recent times. In August, 1831, there was an uncommonly dark day, which was thought to have been caused by an eruption of a volcano. The whole day was nearly as dark as night, except for a slight red, lurid appearance, which was perceptable until near night. Lighted candles were necessary during the day. The atmosphere was filled with very light ashes, like the white ashes of wood. The day was perfectly calm. There were no earthquakes or rumblings. After the ash clouds had cleared away it was seen that the pure white snow upon St. Helens was browned by the fall of ashes. It is also said that lava flows took place at that time."

"In October, 1842, St. Helens was discovered all at once to be covered with a dense cloud of smoke, which continued to enlarge and move off in dense masses to the east, filling the heavens in that direction. When the first volume of smoke had cleared away it could be seen distinctly from various parts of the country that an eruption had taken place on the north side of St. Helens, a little below the summit, and from the smoke that continued to rise from the crater it was pronounced a volcano in active operation. When the explosion took place the wind was morthwest, and on the same day, extending from thirty to fifty miles to the southwest, there fell showers of dust or ashes, which covered the ground in some places so as to admit of its being gathered in quantities."

"On November 23, 1843, St. Helens scattered ashes over the Dalles of the Columbia River, fifty miles away, and burned continuously until February 16, 1844. Dense masses of smoke rose from the craters in immense columns, and in the evenings the fires 'lit up the mountain side with a flood of soft yet brilliant radiance.'"

"Having determined to investigate the most active volcano of Washington, we left Tacoma by the midnight train, August 10, 1893,

with packs containing necessaries for the trip and the instruments for observing and recording all we were to see."

"When we reached the mountain, with the aid of a glass I was able to map out a route to the larger of the craters which would not cross any of the great crevasses in the ice slopes. Our ascent began immediately, and in less than an hour became very steep and in places dangerous. Our progress was checked by an enormous cañon, several hundred feet deep, which appeared a counterpart of the great cañon of the Yellowstone. Its formation showed several old lava flows, which, being firmer than the cinders and broken rock, in most places overhung the walls of the cañon and made descent out of the question. The great glacier at its head was fully 100 feet deep at the foot, and was ploughing its way into a huge terminal moraine of small rocks. We could plainly hear the rocks grinding together as the great body of ice slowly forced them down the cañon. This great glacier headed in the ice cap at the summit of the mountain, and, although it looked steep and slippery, we decided to try the route. It was then 10 o'clock in the morning—a bad time to climb ice slopes aud snow fields—but we had been gone from Tacoma nearly a week and had only provisions for two more days. We had proceeded but a short distance cutting steps in the steep ice slope, when a bombardment of rocks warned us that our route was to be a dangerous one. The surface of the glacier seemed a sheet of ice clear to the summit, and down its slippery surface came rocks large and small as fast as the noonday sun melted the ice and snow which held them near the top."

"Imagine a toboggan slide about three miles long, starting nearly 10,000 feet above the sea with an initial grade of forty-five degrees. The speed of the rocks as they passed us was terrific. They whirled at such a rate that they seemed spherical in form, and as they flew down the slope seemed only to touch the high places in the slightly wavy surface of the glacier, making a metallic sound as they clipped the ice into a cloud which trailed them like a comet's tail. Here and there great rocks lay upon the surface of the glacier, probably having been held by a fall of new snow, and now and then one of these flying rocks would strike those which were held by the ice, and, amid a shower of sparks and chips, would bound into the air fifty feet or more, still whirling like a buzz saw and giving out a sound which I cannot describe. All this would have been very entertaining if so many of the flying rocks had not passed near us."

"We were exposed to this danger for over an hour while climbing a quarter of a mile, and to say that we were all thoroughly frightened

would not do the rocks justice. When at last we reached a place of comparative safety, we were too much much awed to speak."

Source of the Mackenzie River.—Up to the present time the Mackenzie River has never been traced to its head, and its source has only been known from Indian report. The mystery has been solved by Mr. R. G. McConnell of the Dominion Geological Survey, who has just returned from a four months' exploration trip in those regions. The following account of his trip is taken from the *Vancouver News-Advertiser:*

"Mr. McConnel arrived in British Columbia from Ottawa in June, and started out on his trip fron Quesnelle on the 9th of that month. The party numbered six in all and consisted of himself, his assistant, Mr. Russel, two whites he engaged at Quesnelle and two Indians. From Quesnelle the party proceeded in canoes up the Frazer to Giscome Portage. This is seven and a half miles long, aud after crossing it they proceeded down Crooked River to Fort McLeod. Their route then lay down Parsnip River to the forks, where Findlay River meets the Parsnip and gives birth to Peace River."

"On reaching Findlay River Mr. McConnel really commenced his summer's work, as the chief object of his trip was to explore that river and, if possible, the Onimeca also. Mr. McConnel accordingly went up Findlay River to its junction with the Onimeca, and followed the latter river to its head, returning down it again to the same spot. This river is easy navigable on the upper portion, but in the first thirty miles it falls over 500 feet, and is consequently extremely rapid and difficult to ascend. Mr. McConnel then proceeded up the Findlay River."

"Whites had been up the Onimeca River previous to him, as at one time that was a famous gold country, but Mr. McConnel and his party were the first whites to ever ascend the Findlay River to its head. The river is about 250 miles long and is navigable for the greater portion of the way in canoes, though owing to the rapids the party had to proceed the last fifty miles on foot, an arduous proceeding, owing to the roughness of the country. The country is very mountainous, and though at the lower part of the river the valley is six miles wide, the mountains come right down to the water's edge in the upper portion."

"At its mouth the Findlay is about as wide as the Frazer at Quesnelle. It is not deep except in the cañons, where the current is very strong, and, owing to numerous rapids and eddies, progress is very slow. At the head of Findlay River is a lake known in the Indian

tongue as Lake Fehutade, which, being interpreted, means "narrow waters between mountains." This lake is the real source of the Mackenzie River. It is between twenty-five and thirty miles long and not more than a quarter of a mile wide, and is enclosed by high mountains. Around the edge of the lake are glaciers, and the scene is a very pretty one. The mountains rise 5000 to 6000 feet above the lake, while they are some 9000 feet above the level of the sea. After exploring the lake Mr. McConnel started on his homeward journey about the end of August, and it was none to soon, as ice began to form on the river, and while on the Parsnip the party experienced a snowstorm."